

Physical Observations of Jupiter and Mars made during the Year 1882 at the Astrophysical Observatory, Herény, Hungary. By Alexander de Gothard.

(Communicated by Dr. N. de Konkoly.)

The total number of observations of *Jupiter* made this year was 36; 29 belong to the opposition of 1881–82, and seven to the beginning of the opposition of 1882–83.

A great difference is at once perceived between the drawings made in spring and autumn; and this difference is based on real changes.*

The typical distribution of the bands was always the same in the first half of the year. There were visible three chief bands—an equatorial, a southern, and a northern one. For the second half of the year such uniform distribution no longer prevailed. The colour of the equatorial band had on every occasion a certain characteristic rusty-red tone, with very variable shadings.

The form of this band is also changing, but its division and fringing are almost exclusively confined to its southern border.

The colour of the southern band is a faint grey; most of it consists of ashy branches, forming small stripes and prominences, appearing only on its equatorial side; therefore the zone between these two bands shows the most detail and variety. Under the red spot this southern band always appears narrower or curved.

The form and colour of the northern band are very constant; the colour is generally a drab of a feeble greenish tone. The poles of the planet are covered sometimes with a grey nebulous veil of variable extent, the boundary of which is sometimes sharp and sometimes faint.

The red spot is sometimes surrounded by a brilliant white zone. It is almost constantly accompanied by a dark grey cloudy line, narrowing towards the equator to a triangular figure, thus forming the boundary of the above-mentioned bright zone.

On most occasions I observed that the form of the red spot was elliptical; sometimes it is bounded by lines parallel with the major axis, the ends of which are united by half circles.

The colour of the red spot varies very much; sometimes it appears of a dirty flesh colour, at others of a feeble red tint. In the autumn observations it was not visible, so that I began to think it had disappeared. In the spring of 1883 I saw it again, though of an exceedingly pale colour; it was therefore only the unfavourable atmospheric conditions that caused its invisibility. Nevertheless I conclude that the phenomenon is disappearing; and I think there is little hope of finding it again in the opposition of 1884.

* The drawings of *Jupiter* and *Mars* are exhibited in the Society's Library.

In general but little can be said about the observations of the second half of the year; the surface of the planet shows so great a variability that no resemblance can be found between the drawings. But it was remarked that the equator was always covered with a greenish-yellow zone, extending from one-fourth to one-third of the minor axis of the disk, and filled with irregular clouds and nebulosities. The poles were always surrounded by a dark shade.

The instrument with which the observations have been made is the 10 $\frac{1}{4}$ -inch Browning-Newtonian Reflector.

The description of the drawings of *Mars* is much more difficult than of *Jupiter*, as well-defined spots can only be seen with good definition. Thus but little remains to say of the observations.

In January and February of the year 1882 nine observations and drawings were made. Some of the drawings show well-defined spots of great extent.

The colour of the markings is more decided towards the centre of the disk. Here the greyish-green markings contrast very strongly with the red portions of the disk, and thus appear well defined.

Towards the limb the colours are paler and feebler, no part being at all defined.

The northern ice-cap was distinctly visible on all occasions, surrounded by a ring of bright white colour.

Eugen de Gothard believed that he twice glimpsed one of the satellites: viz. on February 5, 8^h 0^m H.M.T., when he saw an exceedingly small starlike point at a distance of about 2.5–3 *Mars*-diameters from the disk in the N.W. direction; and on February 9, 8^h 15^m H.M.T., when a bright point was noticed on the S.E. side of the planet at about the same distance. The magnifying power was 436.

Note on the Chromosphere. By the Rev. S. J. Perry, F.R.S.

A letter appeared in the *Observatory* a few months since containing a communication from Professor Respighi on the subject of the Chromospheric Lines between A and C, and a wish was expressed that English observations bearing on his results might be brought before the public. I have therefore thought it worth while to bring under the notice of the Fellows of the Society an observation taken a few days ago.

On May 30, whilst taking the usual daily measures of the Chromosphere, my assistant at Stonyhurst Observatory, Mr. W. McKeon, observed the bright line Kirchhoff 654.3 between C and B. It was only visible near the point 63° 58' E. of N., image direct. Sweeping round the Sun's limb the chromosphere became suddenly intensely bright at this point, and also very wide, and an